J. T. NESDALL.

SECURING AND SAFETY DEVICE FOR RAILWAY RAIL AND OTHER JOINTS.

APPLICATION FILED FEB. 19, 1908.

**934,982.** Patented Sept. 21, 1909.

Fig. 1.

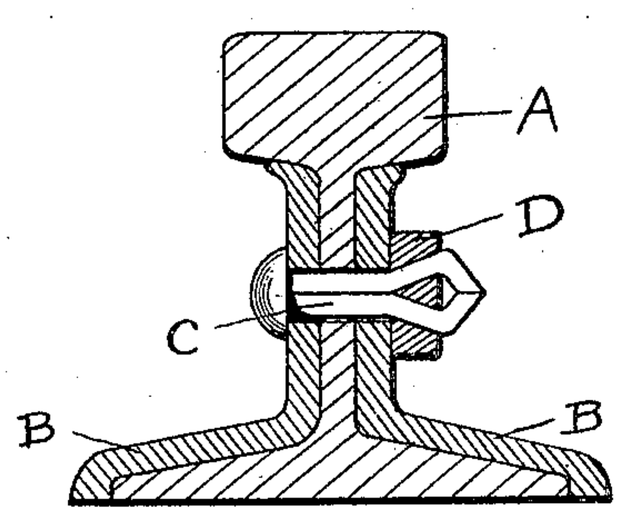



Fig. 5.

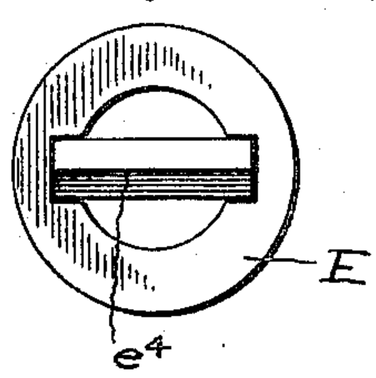



Fig. 2.

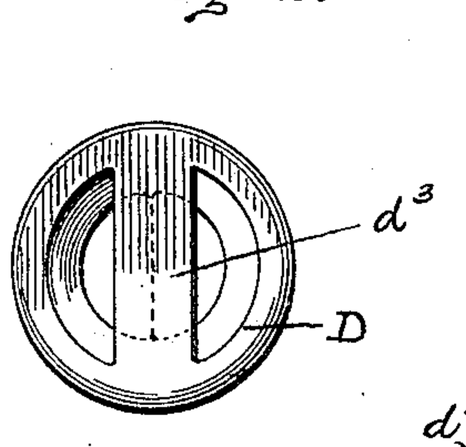



Fig. 7.

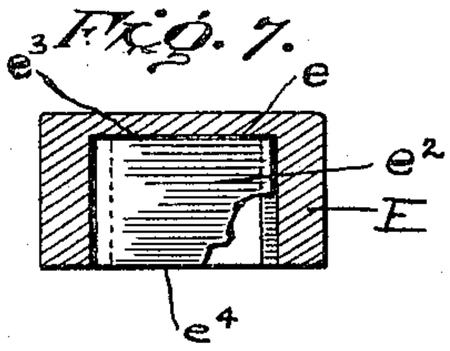



Fig. 4.

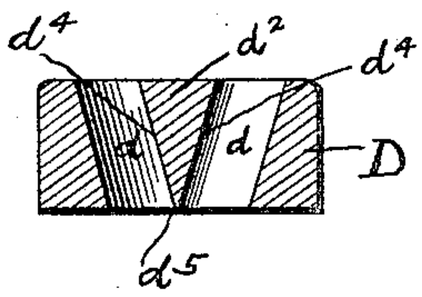



Fig. 3.

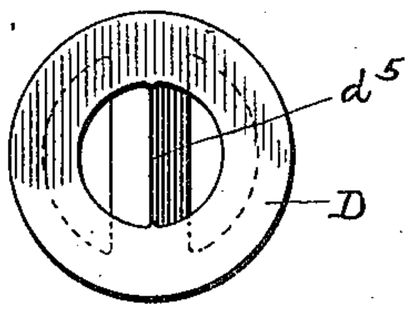



Fig. 6.

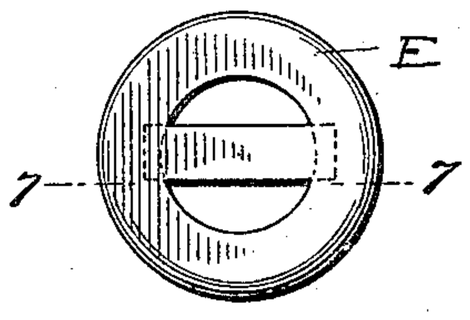
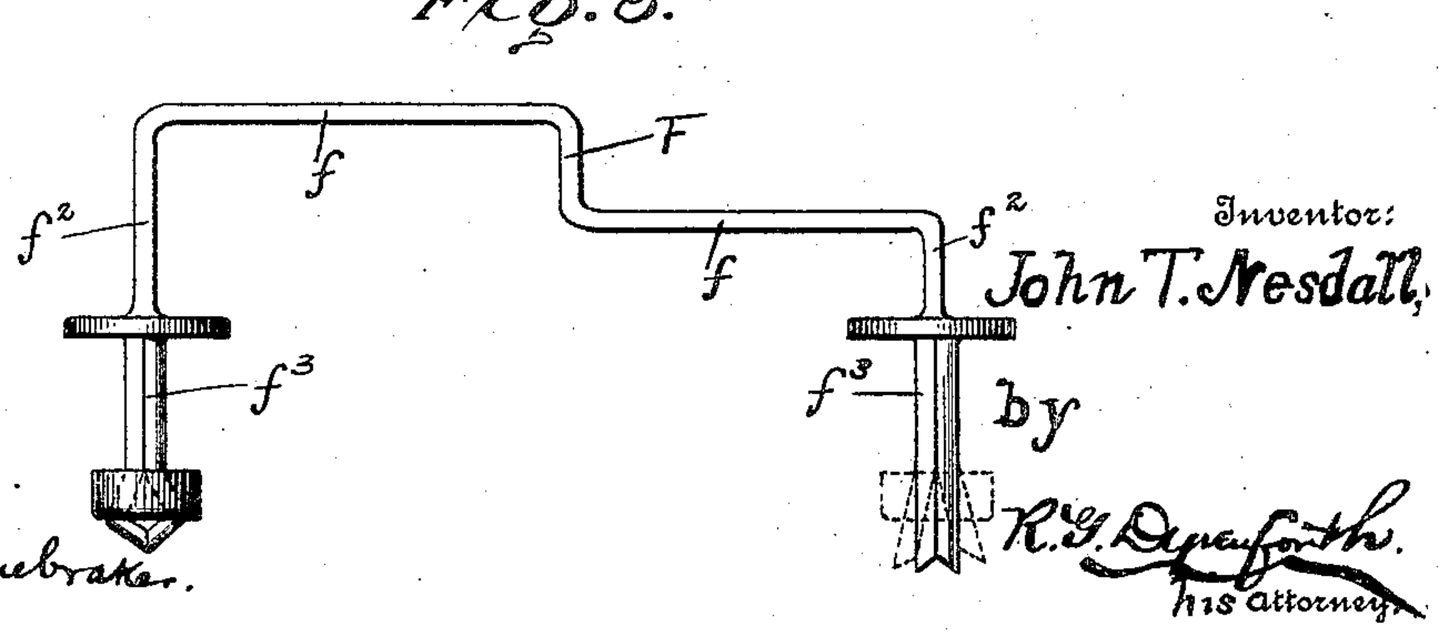



Fig. 8.




Witnesses

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# UNITED STATES PATENT OFFICE.

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## SECURING AND SAFETY DEVICE FOR RAILWAY-RAIL AND OTHER JOINTS.

934,982. Specification of Letters Patent. Patented Sept. 21, 1909.

Application filed February 19, 1908. Serial No. 416,675.

*To all whom it may concern:*

Be it known that I, JOHN T. NESDALL, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Securing and Safety Devices for Railway-Rail and other Joints; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Heretofore, in locking split-bolts in railway construction and structural iron-work, etc., it has generally been proposed to use, in addition to and unsupported by the collar or nut, a wedge for opening up or spreading apart the split ends of the bolt against the conical or tapering bore of the collar; whereby there is necessitated two separate and distinct operations,—first, the placing of the collar or nut on the bolt, and, second, the driving in of the wedge. The disadvantage of this construction is that, in the operation of closing the ends of the bolt over the wedge, there is necessarily exerted a pressure on the inclined sides of the wedge, which tends to cause "creeping", that is, retrograde or backward movement thereof, so that some means have to be provided to hold the wedge against such movement while the ends of the split-bolt are being closed.

Therefore, the principal object of my invention is to provide a novel form of plate or annulus, combining in one piece the features and functions of a lock-nut or collar and a wedge, which arrangement, so far as I know, is distinctly novel with me. By this peculiar construction, I am enabled, by a single operation, to place the collar on the bolt and simultaneously to drive the wedge between the two members of the shank of the split-bolt. And, consequently, as the wedge forms an integral part of the collar, or nut, the wedge-portion does not have to be held during the operation of closing the ends of the split-bolt thereover.

A subsidiary object is to provide such a peculiar form of collar or nut for the uses specified, which shall combine with a minimum of parts a maximum of simplicity and efficiency in use.

Another important object is to provide such a peculiar form of collar, or nut, for the uses specified, which, coöperating with the bolt, shall, when once applied, be positively locked against working loose by jars, shocks, and strains of passing trains, and which thereby most effectually locks the bolt.

With these objects in view, the invention may be said to reside in the novel combination and arrangement of parts of a device characterized by my invention, as will hereinafter be fully described in the specification, summed up in the claims, and illustrated in the drawing.

In the acocmpanying drawing, I have illustrated two embodiments or species of my invention, and in the drawing: Figure 1 is a transverse section through a railway rail and fish-plates, showing a bolt carrying my preferred form of improvements, and displaying the bolt and collar locked, as in use: Fig. 2 is a top plan view of the collar or nut of my invention; Fig. 3 is a bottom plan view thereof; Fig. 4 is a vertical section taken across Fig. 2; Fig. 5 is a bottom plan view of another form of collar carrying a wedge; Fig. 6 is a top plan view thereof; Fig. 7 is a vertical section on the line 7—7, Fig. 6; Fig. 8 shows the application of my invention to a rail-bond.

Referring to the drawing in detail and first to Figs. 1 to 4 thereof, A designates a railway rail, B, B the fish-plates, and C a split-bolt, all of well known and usual construction. D designates my preferred form of collar or nut, constructed desirably as a casting of malleable iron of a suitable depth, and having two converging openings $d$, $d$ therethrough, preferably elliptical in cross section, so as to form or leave a wedge-shaped center-piece $d^2$; that is, a center-piece having a base $d^3$ and a body-portion formed in two preferably straight planes $d^4$ converging to an edge $d^5$. In this form of device, therefore, the collar carries a wedge-shaped center-piece, which is desirably and advantageously integral with the collar, as shown. The parts to be secured, having been properly assembled, the bolt is applied cold by inserting it through the openings in the parts provided for the purpose, and is driven home; whereupon any suitable means, in the shape of a proper tool, being temporarily held against the head of the bolt to secure it against displacement, the free ends of the

bolt are separated or spread apart by the wedge-shaped center-piece $d^2$ being forced therebetween, the collar and the wedge-shaped center-piece $d^2$ carried thereby being thus positioned on the bolt simultaneously. Proper means are then applied to close the ends of the bolt over the wedge-shaped center-piece, whereupon the bolt and the collar are securely locked against movement and any possibility of working loose by jars and shocks of passing trains.

From the above description, taken in connection with the drawing, it will be noted that I have reduced the parts of my device to a minimum and that my structure therefore embodies a maximum of simplicity, whereby I am enabled to dispense with all skilled labor in the application of my lock-collar or nut.

Referring, now, to the modification disclosed in Figs. 5, 6, and 7, E represents a collar, constructed desirably as a casting of malleable iron of a suitable depth, having an internal shoulder or ledge $e$, and carrying interiorly a wedge $e^2$ adapted to be supported by said shoulder $e$, the base $e^3$ of said wedge resting upon said shoulder and the edge $e^4$ of the wedge being in proximity to the upper end surface of the collar, substantially as shown in the drawing. This collar and wedge are applied simultaneously to the bolt, as in the device of Figs. 1 to 4, the shoulder $e$ preventing the wedge from being forced out of the collar when the collar and wedge are being positioned on the bolt. This is not the preferred form of my structure, however, as it is not so easy of manufacture, nor as cheap.

Referring, now, to Fig. 7, it will be noted that this figure discloses the application of my invention to a rail-bond for electric railways. Rail-bonds are, as is well known, constructed in many forms, for purposes of illustration, merely, I have exhibited the form and shape of rail-bond shown in Fig. 7; wherein F is a desirably irregularly-formed strip of suitable material, provided with bent extensions $f$, $f$ terminating in arms $f^2$, $f^2$, adapted to lie against the railway-rail, at a joint, and thus constitute electrical conductors from one rail to the other. Extending from the arms $f^2$, $f^2$, are bolt-members $f^3$, $f^3$, which are adapted to extend transversely through the railway-rail and are, for my purposes, desirably split, as shown, that is, are provided with a shank in two members. Adapted to be positioned on the bolt-member, to lock the rail-bond, is the collar or nut of my invention, either of the form shown in Figs. 1 to 4, or the form shown in Figs. 5 and 6, and as fully described in connection with those figures. The operation of my collar in this particular application of my invention is obvious, from the foregoing explanation of the construction and operation of the collar of Figs. 1 to 6, and therefore repetition here is deemed superfluous.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters-Patent, is:

A lock-collar or nut for bolts in railway construction, structural iron-work, etc., carrying, integral therewith, a flat-sided wedge, and formed with converging openings therethrough, each of said openings having its ends on opposite sides of the lock-collar or nut and flush with the top and bottom respectively of the wedge.

In testimony whereof, I affix my signature, in the presence of two subscribing witnesses.

JOHN T. NESDALL.

Witnesses:
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A. A. FYFE.